24. (Amended) Prokaryotic or eukaryotic cells which are transformed with the ~~DNA [structures]~~ construct of claim 21.

REMARKS

Applicants have amended the specification to add the heading "Brief Description of the Drawing" and to move the description from page 7 to page 1. Applicants have amended claims 19, 20, 21, 22, 23, and 24 to more particularly point out and distinctly claim the subject matter Applicants regard as their invention. Support for the amendments to claims 19 and 21 may be found throughout the specification, such as page 1, lines 3-7 and 27-31 and page 4, lines 10-18. Further support for the amendment to claim 21 may be found in the specification at page 5, lines 10-28.

In the Office Action, dated June 22, 1999, the Office objected to the disclosure for failure to contain a brief description of the drawing. (Office Action at page 2, paragraph 2.) Applicants would like to call the Office's attention to page 7, lines 12-17, which contains a brief description of the drawing. Applicants have added an appropriate heading and moved the description from page 7, lines 12-17, to page 2 in order to conform to the suggested arrangement of the application pursuant to 37 CFR §1.77.

I. Rejections Under 35 U.S.C. § 112

The Office rejected claims 19, 21, 22, and 24 under 35 U.S.C. § 112, first paragraph. The Office acknowledges that the specification is enabling for the isolated

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

and purified DNA sequence that encodes HCMV pp28 and the DNA that encodes a fusion protein comprising HCMV pp28. However, the Office states that Applicants have failed to enable "DNA encoding any and all immunogenic parts thereof." (Office Action at page 2, paragraph 7, to page 3, paragraph 1.) Applicants note that a similar rejection was made in the parent application. (U.S. Patent Application 07/746,161, Office Action of August 10, 1992, at page 3, paragraph 2.) The Examiner suggested an amendment to overcome the rejection. Applicants have similarly amended independent Claims 19 and 21 to replace "immunogenic parts thereof" with "antigenic portions thereof that elicit antibodies that immunologically bind to pp28". The Examiner suggested that "[s]uch language functionally defines the fragments or portions enabled by the specification," and that "[i]t was routine at the time the invention was made in the art to make and screen portions of cloned proteins for small (e.g. 6-15 amino acids in length) fragments which elicit antibodies of predetermined specificity against the intact protein from which they were derived." (U.S. Patent Application 07/746,161, Office Action of August 10, 1992, at page 3, paragraph 2.) These amendments also enable dependent claims 22 and 24. Therefore, Applicants respectfully request that the rejection to claims 19, 21, 22, and 24 under 35 U.S.C. § 112, first paragraph, be withdrawn.

The Office rejected claims 19-24 under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as their invention. (Office Action at page 3, paragraph 2.) Applicants respectfully traverse this objection.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

The Office asserted that in claims 19-21 the term "structure" did not have a clear meaning. Applicants have amended claims 19, 20, 22, and 23 to replace the words "structure" or "structures" with "molecule," and claims 21, and 24 to replace the words "structure" or "structures" with "construct". The terms "DNA molecule" and "DNA construct" have a clear meaning to those of skill in the art. Therefore, Applicants request that this rejection be withdrawn.

The Office states that claim 19 is indefinite in reciting "immunogenic parts thereof," and that the intended limitations of "immunogenic parts" parts are not clear. (Office Action from page 3, paragraph 5, to page 4, paragraph 1.) Applicants submit that the abovementioned amendment to claim 19 has made it sufficiently definite, and respectfully request that the rejection be withdrawn.

The Office has rejected claim 19 under 35 U.S.C. § 112, second paragraph, on the grounds that claim 19 is indefinite in reciting "said DNA" without clear antecedent in the preceding part of the claim which recites "a DNA structure." (Office Action at page 4, paragraph 2.) Applicants have amended "said DNA" to recite "said DNA molecule," and as noted above "a DNA structure" was amended to recite "a DNA molecule." These amendments give "said DNA molecule" a clear antecedent in the claim, and therefore this rejection should be withdrawn.

The Office has rejected claim 19 under 35 U.S.C. § 112, second paragraph, on the grounds that claim 19 is indefinite in reciting "does not comprise the 6.5 kB HindIII R fragment from the genome of human cytomegalovirus strain AD169" since the metes

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
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and bounds of the claim are not clear. (Office Action at page 4, paragraph 3.) The Office questions whether the claim encompasses the entire HCMV genome, or fragments that comprise the portion of the genome that encode HCMV pp28, or fragments larger that the HindIII R fragment in any and all HCMV strains. Applicants respectfully traverse this rejection.

A person skilled in the art would know that claim 19 does not encompass the entire HCMV genome, but rather encompasses fragments that comprise the portion of the genome that encode HCMV pp28. Because a person skilled in the art would understand the meaning of the claim, this rejection has been overcome and should be withdrawn.

The Office has rejected claim 21, under 35 U.S.C. § 112, second paragraph, on the grounds that claim 21 is indefinite in reciting "said construct" without antecedent. (Office Action at page 4, paragraph 4.) Applicants have amended claim 21 to replace "a DNA structure" with "a DNA construct." This amendment gives "said DNA construct" a clear antecedent in the claim, and therefore this rejection has been overcome.

The Office has rejected claims 22, 23, and 24 under 35 U.S.C. § 112, second paragraph, on the grounds that claim 22, 23, and 24 are indefinite in reciting "the DNA structures" of claims 19, 20, and 21, respectively, since claims 19, 20, and 21 recite "structure" in the singular. (Office Action at page 4, paragraph 5.) Claims 22, 23 and 24 have been amended to recite "molecule" or "construct" instead of "structure" to

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

reflect the changes made to claims 19, 20 and 21 and to refer to claims 19, 20 and 21 in the singular. This rejection has been overcome and should be withdrawn.

II. Rejection Under 35 U.S.C. § § 102(b) and 103

The Office has rejected claims 19, 21, 22 and 24 under 35 U.S.C. § 102(b) as anticipated by or, in the alternative, under 35 U.S.C. § 103 (a) as obvious over *Ihara et al.* (Office Action at page 5, paragraph 3.) The Office alleges that *Ihara* discloses a cosmid clone and bacteria containing the HindIII DNA structure of human cytomegalovirus Towne strain that inherently contains the DNA encoding the phosphoprotein which is either the same as, or an obvious variant of, the HCMV pp28 of strain AD169. Applicants respectfully traverse this rejection.

In order for a single prior art reference to anticipate a claim under 35 U.S.C. 102(b), all elements of the claim must be disclosed in that reference. Here, *Ihara* does not disclose each element of the claims 19, 21, 22 and 24. Specifically, claim 19 contains the element: wherein said DNA molecule *does not comprise a 6.5 kB HindIII R fragment* from the genome of human cytomegalovirus strain Ad169. In contrast, *Ihara* discloses the HindIII cleavage map, *including* HindIII fragments. Furthermore, *Ihara* does not disclose which portion of the fragments encodes pp28. Therefore, *Ihara* does not disclose every element of independent claim 19, or dependent claim 22. Similarly, amended claim 21 contains the element: a DNA construct. *Ihara* does not disclose such an element. Therefore, *Ihara* does not disclose every element of independent

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

claim 21, or dependent claim 24. For these reasons, claims 19, 21, 22, and 24 are not anticipated by *Ihara*, and this rejection should be withdrawn.

Also, claims 19, 21, 22, and 24 are not obvious under 35 U.S.C. § 103 (a) over *Ihara*. The Office states that HCMV pp28 is an obvious variation of *Ihara* which discloses a cosmid clone and bacteria containing the HindIII DNA structure of HCMV Towne strain. As stated above, *Ihara* does not teach or suggest the DNA molecule encoding HCMV pp28 as claimed in claims 19, 21, 22 or 24. Furthermore claims 19, 21, 22 and 24 could not be arrived at through obvious variation of the teachings of *Ihara*. The applicants discovered unique immunogenic properties in pp28, mainly that it was recognized by almost all highly HCMV positive human sera. This led to the conclusion that pp28 must include one of the principal immunogens of HCMV. (Specification at page 1, lines 27-31.) The Applicants localized the gene that encoded HCMV pp28 to a particular portion of a complete HindIII fragment. While *Ihara* taught HindIII cleavage maps, it never identified pp28. Furthermore, there is no suggestion in *Ihara* that a 6.5 kB HindIII R fragment has immunogenic properties. Therefore, *Ihara* does not teach or suggest claim 19 or dependant claim 22. Similarly, *Ihara* does not teach or suggest a DNA construct which encodes pp28. Therefore, *Ihara* does not teach or suggest claim 21, or dependent claim 24. Finally, the Office has not shown that *Ihara* provides a reasonable expectation of success in arriving at the claimed invention.

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000

In view of the above arguments, Applicants respectfully submits that the claimed composition would not have been obvious to one of ordinary skill in the art at the time the invention was made.

In view of the foregoing amendments and remarks, Applicants respectfully request the reconsideration and reexamination of the pending claims and the timely allowance of the pending claims.

Please grant any extensions of time required to enter this response and charge any additional required fees to our deposit account 06-0916.

Respectfully submitted,

FINNEGAN, HENDERSON, FARABOW,
GARRETT & DUNNER, L.L.P.

By: 
David S. Forman
Reg. No.: 33,694

Dated: December 22,1999

LAW OFFICES
FINNEGAN, HENDERSON,
FARABOW, GARRETT,
& DUNNER, L.L.P.
1300 I STREET, N. W.
WASHINGTON, DC 20005
202-408-4000